TRIP REPORT

FOR

SOIL BORINGS AND MONITORING WELL INSTALLATION AT THE HUFFMAN WOOD PRESERVING SITE AND OKLAHOMA POLE AND LUMBER FACILITY

BROKEN BOW, OKLAHOMA

Submitted to:

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1.0 Introduction

Under the U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Enforcement, Permitting, and Assistance (REPA4) Contract (No. EP-W-07-073), Booz Allen Hamilton (Booz Allen) provides program management and technical environmental services to EPA in Zone 2. Under Task Order R6022, Support for Sampling at RCRA and FUDS Facilities, Booz Allen was tasked to install a groundwater monitoring well at the Oklahoma Pole and Lumber Company (OPLC) site and advance ten (10) soil borings at the Huffman Wood Preserving (HWP) site, both located in Broken Bow, Oklahoma. Both facilities are on the Government Performance and Results Act (GPRA) RCRA 2020 baseline, and are either bankrupt (HWP) or underfunded (OPLC). EPA has been working with the Oklahoma Department of Environmental Quality (ODEQ) to assess and clean up the properties so that they will meet the 2020 GPRA goals. This Trip Report documents the activities performed during the field investigation conducted from September 20, 2010, through September 22, 2010.

Table 1 provides a list of the primary personnel present during the field activities, along with their affiliations.

Table 1: Participants in Field Investigation

Name	Affiliation
Rick Ehrhart	EPA Region 6
Robert Luschek	EPA Region 6
Don Hensch	Oklahoma Department of Environmental Quality
Wally O'Rear	Booz Allen Hamilton
Cedric Cascio	MagnaCore Drilling and Environmental Services

2.0 Project Description

2.1 Facility History and Background

HWP is a 25-acre facility that treated fence posts and other wood products with creosote and pentachlorophenol from 1956 until 1984. In 1989, the now-deceased owner closed five unlined surface impoundments under State authority. The owner passed away in 1991, and the facility was purchased by an adjacent property owner to house his small welding shop. Several acres of the site are also being used as a lay-down yard for treated and untreated poles. According to the RCRA Corrective Action Environmental Indicator (EI) Determination for Current Human Exposures under Control (CA725) completed in June 2006, a March 2003 investigation identified wood treating compounds (pentachlorophenol and creosote-related compounds) in a limited area around the old treatment vessel locations and groundwater contamination in the drainage area below several closed surface impoundments. The CA 725 indicated that human exposures are under control at the HWP site. The EPA Resource Conservation and Recovery Information System (RCRIS) database indicates that there is not sufficient information

currently available to determine whether or not migration of contaminated groundwater is under control at the HWP site.

The OPLC facility is located in close proximity to the HWP site. Thomason Lumber and Timber, Inc. (TLTC), the initial owner of the facility, abandoned the site in 1999. TLTC left behind two closed surface impoundments, 15 groundwater wells, and possible soil contamination. The site was purchased by OPLC (current owner), who took over the deed and liability for the property. When the site was abandoned, the required maintenance and monitoring was not being conducted. Minimal investigation of the site has been conducted to determine the extent of contamination as a result of wood treating operations. In August 2008, EPA conducted a round of groundwater sampling at the facility to assist ODEQ in assessing whether or not a determination could be made regarding the migration of contaminated groundwater being under control (CA750) at the facility. As part of the August 2008, investigation conducted by EPA, samples were collected and analyzed from all 15 groundwater monitoring wells. In August 2009, EPA Region 6 installed three new groundwater monitoring wells (MW-8, MW-9, and MW-10) at OPLC down-gradient of the QC Pad to serve as compliance wells once the QC Pad is closed. EPA also collected surface soil samples from around the site. The EPA RCRIS database indicates that there is not sufficient information currently available to determine whether or not human exposures (CA725) and migration of contaminated groundwater are under control (CA750) at the OPLC site.

2.2 Project Objectives

The field investigation was conducted from September 20, 2010, through September 22, 2010. To assist EPA in determining the horizontal and vertical extent of contamination at both sites, Booz Allen installed one groundwater monitoring well at the OPLC site and advanced ten soil borings at the HWP site. This Trip Report includes photographs and field logbooks, and documents the activities performed during the investigation.

2.3 Site Description

HWP and OPLC are located approximately one-half mile apart in Broken Bow, Oklahoma. Broken Bow is located in McCurtain County in southeastern Oklahoma. A site map depicting their location in respect to Broken Bow is presented as Figure 1.

3.0 Field Investigation Activities

3.1 Groundwater Monitoring Well Installation

Using a track rig CME-55 hollow stem auger (HSA), one groundwater monitoring well was installed at the OPLC site on September 20, 2010. The groundwater monitoring well (designated as MW–11) was installed with a stickup completion, which utilized a protective casing and bollards painted with a high visibility yellow. Well MW–11 was installed in the northeastern portion of the property approximately 60 feet northeast of Well 6C. The location of MW-11 is presented in Figure 3, and a summary of the well

construction is provided in Table 2. The Boring Log is presented as Attachment C, and the State of Oklahoma Well Report is presented as Attachment D.

Table 2: Well Construction Summary

Well ID	Total Depth (bgs)	Screened Interval (bgs)	Hole Collapse (bgs)	Filter Pack (bgs)	Bentonite (bgs)	Grout (bgs)
MW–11	25	10.0 - 25.0	0.0	8.0 - 25.0	6.0 - 8.0	0.0 - 6.0

bgs - Below ground surface

* Wells constructed using #10 slot stainless steel continuous wire-round screens, stainless steel blank casing, #20/40 silica sand, 3/8-inch bentonite chips, and portland grout with 3–5% bentonite

Well MW-11 was developed on September 21, 2010. The static water level was gauged prior to development and is provided in Table 3. The well was bailed for one hour using a disposable polyethylene bailer. After bailing, Well MW–11 was pumped using a submersible pump for two hours at a flow rate of 425 mL/min.

Table 3: Static Water Level

Well	MW – 11
Static Water Level (btoc)	15.95

btoc – Below top of casing

3.2 Soil Boring Advancement

Using a direct push drill rig, ten (10) soil borings were advanced at HWP to a minimum depth of eight feet and a maximum of 12 feet. ODEQ and EPA personnel selected the location for each soil boring. The ten borings were advanced across the southern section of the property. The borings were advanced from the east fence line near Huffman Road (B-1) and continued along the tree line to the west side of the property (B-9). As a result of a strong odor in boring B-7, ODEQ personnel placed another boring (B-10) between borings B-6 and B-8 and south of B-7. Since the GPS coordinate was difficult to measure due to dense vegetation, the location of boring B-10 was measured from the other wells installed at the facility. B-10 is located 54 feet south of B-7, 66.5 feet east of B-8, and 77.0 feet west of B-6. The soil boring locations are presented in Figure 2, and a summary of the borehole depths is presented in Attachment D.

3.3 Investigation-Derived Waste and Waste Disposal

All investigation-derived waste (IDW) was drummed. The IDW generated during the field investigation at HWP included one drum containing decontamination water as well as one drum containing soil cuttings and soil cores. The IDW generated at OPLC consisted of two drums containing purge water and decontamination water and two drums containing soil cuttings and soil cores. The analytical data provided by the ODEQ

indicated that the IDW from both sites is non-hazardous. The decontamination water will be disposed at the City of Broken Bow wastewater treatment plant, and the disposal of which will be coordinated by the City of Broken Bow and ODEQ personnel. The soil cuttings and soil cores will be disposed as a non-hazardous waste.

3.4 Well Surveying

On September 27, 2010, the new groundwater monitoring well at OPLC was surveyed using the Oklahoma State Plane System by Chappell Land Surveying. The coordinates are to the closest one foot and referenced to the State Plane Coordinate System. A ground elevation to the closest 0.1- foot and an elevation for the top of the well riser to the closest 0.01-foot was also obtained. This elevation was referenced to Mean Sea Level, specifically to the North American Vertical Datum (NAVD) of 1988. The results of the survey are presented as Attachment E.

3.5 Documentation

Booz Allen and ODEQ field personnel recorded all field activities conducted between September 20, 2010, and September 22, 2010, in field logbooks. Copies of these logbooks are presented as Attachment B. Photographs captured during the field investigation were consolidated into a photographic log, which is presented as Attachment A. The latitude and longitude coordinates for each sampling location were obtained by ODEQ personnel using a handheld global positioning system (GPS) unit and are presented in Table 4.

ODEQ personnel were unable to measure the coordinates for boring B-10 using a GPS unit as a satellite signal was not available due to vegetation around the location. Booz Allen personnel, however, were able to measure the coordinates. These coordinates are provided in Table 4.

Table 4: Well and Soil Borings Coordinates

Location	Latitude	Longitude
MW-11	34.02360° N	94.72662° E
B-1	34.02245° N	94.73257° E
B-2	34.02251° N	94.73280° E
B-3	34.02259° N	94.73306° E
B-4	34.02271° N	94.73319° E
B-5	34.02287° N	94.73344° E
B-6	34.02289° N	94.73368° E
B-7	34.02325° N	94.73384° E
B-8	34.02311° N	94.73403° E
B-9	34.02327° N	94.73402° E
B-10	34.02307° N	94.73376° E

FIGURE 1

SITE LOCATION MAP

FIGURE 2

SOIL BORING LOCATIONS

FIGURE 3

GROUNDWATER MONITORING WELL LOCATION

ATTACHMENT A

PHOTOGRAPHIC LOG

ATTACHMENT B

COPIES OF FIELD LOGBOOKS

ATTACHMENT C

BORING LOG

ATTACHMENT D

STATE OF OKLAHOMA WELL REPORTS

ATTACHMENT E

WELL SURVEY RESULTS